



## Medication Errors Increase Risk of Death in Patients with Parkinson's Disease

### *Medikasyon Hataları Parkinson Hastalarında Ölüm Riskini Artırıyor*

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#### Medication Errors Increase Risk of Death in Patients with Parkinson's Disease

Parkinson's disease (PD) is the second most frequent neurodegenerative disease. It has been reported that patients with PD stay in hospital for longer times and have increased complication rates compared with their age groups. Twenty five percent of all patients with PD in the world are hospitalized in a year. Oftenly, patients with PD are hospitalized due to problems not related with PD (Hospitalization in services other than neurology). Medication errors in PD oftenly involve dopaminergic drugs that are not given in time and using contraindicated drugs (haloperidol, metocloropramide, etc.) and cause motor and non-motor disturbances (1). When hospitalized, 75% of the patients with PD can not get their medication in time. Delays in medication cause increase in tremor and rigidity, loss of balance, confusion, agitation and communication difficulties.

Number of publications searching medication errors in hospitals is increasing nowadays. The largest study was performed in Spain. Records of 1628 patients with PD were investigated during two years and they found that these patients were hospitalized 2546 times in 2 years. During hospitalization, medication errors were found in approximately 50% of the patients. Omitting dopaminergic drugs, giving inappropriate anti-emetic drugs and giving inappropriate anti-psychotics drugs were detected as most common causes. It was shown that medication errors increased hospitalization time by 4 days on average. The most striking result in this study was that the mortality rate was 11.8%. Mortality rates were 3.7%

and 6% in studies from Australia and Italy, respectively (2). In the study from Netherlands, 684 patients were evaluated and it was found that 26% of the patients used inappropriate drugs and 33% of the patients had one or more complications. It was found that those rates did not change in patients who were hospitalized in neurology service and who were hospitalized in other services (3). In another study, 46 patients were evaluated and medication errors were detected in 39% of the patients. Also UPDRS motor scores worsened by 5 points by average at discharge compared with prior to hospitalization (4).

In the study from England, it was found that medication was not given or omitted in most of the patients. Eighty percent of the doctors did not know that clozapine and quetiapine are the anti-psychotics that have minimal side effects on PD symptoms. Seventy one percent of hospital staff did not know that anti-emetics such as metocloropramide could worsen motor symptoms of patients with PD. Adverse events including need for transfer to intensive care unit were seen in 60% of the patients (2).

Reasons for long hospitalization in clinics or emergency services in 522 patients with PD were investigated in 4 studies performed in last 10 years. Medication error rates were 74%, 71%, 89.9% and 71.8%, respectively. Regular usage rate of L-dopa or dopamin agonists was 4.2-23.6%. The rate of medications for PD which could not be provided was 12-54%. In 21.3-41% of the patients, dopamin antagonists were used.

A study published in 2014 searched for how the results will be if patient with PD are hospitalized in a clinic involving a movement disorders specialist (5). In this case; less omitting of drugs, more giving drugs in time, shorter hospitalization and better patients' experience of care were found. Larger randomized and controlled

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studies were suggested for evaluation of cost-effectiveness of this condition and confirmation of the findings.

Awareness of patients, their caring parents and health carers about the solutions for the problems caused by medication errors in patients with PD should be raised immediately.

#### **Ethics**

**Peer-review:** Internally peer-reviewed.

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